



[Reported Officially for the Scientific American.]

## LIST OF PATENT CLAIMS

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**OPERATING THE THROTTLE VALVE OF STEAM ENGINES**—Albert Bibbee, of Chelsea, Mass. I claim raising and lowering the vibrating toe, a, by means of the lever, f, operated by the governor, in the manner substantially as set forth.

**SHOT POUCHES**—J. T. Capewell, of Woodbury, Conn. I do not claim the construction of the charger, D, fig. 3, as new, neither do I claim the main tube, as shown at A, fig. 1, and at B, fig. 2; nor yet the small tubes, a and g; I do not claim the ring, C, fig. 1; nor the spiral spring, s. I claim my improvement in the construction of a cut-off having the lower edge or bottom straight; also having the vertical edges turned up, or over, for the purpose substantially as described, K, fig. 2.

I also claim the mode of fastening the rings around the main tube or throat of the shot pouch, in the manner substantially as described and shown at fig. 5.

**FIELD FENCES**—T. J. Carleton and Stephen Post, of York, Ohio. We claim a fence constructed of rails, secured to each other and supported at proper distances above the ground by posts composed of iron rods twisted alternately round each other and round the rails, as described, and one or both of the rods bent down from the top of the fence, to brace it, as specified, to the base in which the rods are fixed.

**LOCOMOTIVE FURNACE GRATES**—G. R. Comstock, of Manheim, N. Y. I am aware that grate frames with numerous vertically moving fingers to stir and clean the fires of locomotives, have been used by Nichols & Boyes, as shown in their patent of 1854, before making the grate, neither do I claim, of themselves, the eccentrics or rods by which the slides are moved.

I claim the simultaneous raising of the grate, B, and opening of pipes, F and G, at will, for aiding the combustion of fuel in the furnace during the running of the engine, by the combination of reciprocating plates, C, C', and stop rods, I, and parts connected therewith, or devices equivalent thereto.

**REPLACING RAILROAD CARS**—H. N. Degraw, of Piermont, N. Y. I do not claim any of the devices, separately considered, making up the combination, made to firmly grip the rail, to secure a steady fulcrum for the operation of the lever; the packing wedge follows up the movement of the wheel to retain it in the place to which it has been moved, and upon raising the hand lever, the gripping jaws are released, and the whole implement may be run forward on the rail for a further joint action of the self-adjusting wedge and gripe of the jaws as a prop to follow up the work, repeatedly and progressively, as set forth.

**BRICK MACHINES**—L. T. Delassize, of New Orleans, La. I claim the combination of the sectional pinion, L, and spring toothed crane, M, with the rock shaft, E, and pressing rods, J, arranged and operating substantially as and for the purpose set forth.

**SCAFFOLDS**—Chas. Foster, of Philadelphia, Pa. I do not claim separately either of the several devices constituting the scaffold, or the combination of them. I claim a scaffold consisting of the combination of the adjustable uprights, A A A, the movable brackets, B B, for supporting the foot boards; and the horizontal adjustable ties, D D, the same being arranged, combined together and operating, as described, and also held or secured in a perfectly steady position, near the building which is to be repaired or painted, without direct contact with the wall of the same, by means of the jacks, E E, and the braces, F F, constructed, applied, and operating, substantially as set forth.

**TELEGRAPHIC REGISTERS**—M. G. Farmer, of Salem, Mass. I am aware that telegraphic registers, operating upon the same general principle of mine, have been invented at an earlier date, by Elisha Wilson, of New Haven, Conn. in his machine, however, the local circuits are both closed, when the main circuits are both closed; while in mine, the local circuits are similarly both open, when the main circuits are both closed, the same work, which, in Wilson's machine, is done by the closing of the local circuit, is done in mine, by the opening of the local circuit, and vice versa. The general plan, therefore, in which my machine agrees with Wilson's, I do not claim; neither do I claim simply substituting the breaking of the circuit for the closing to do the same work.

But I claim that modified combination of parts, by which, in the self-acting telegraphic register, as described, the breaking instead of the closing of the local circuit is made to close the main circuit, and by which, throughout the breaking of the local circuit is made a substitute for the closing.

**HEATING BUILDINGS BY STEAM**—S. J. Gold, of New Haven, Conn. I claim the automatic governing of the draft, and the shutting off of the same, by the forcing of water from the boiler, by pressure of steam, under the circumstances and substantially as specified, or, in other words, establishing the hydraulic seat.

I also claim the automatic governing of the valve, a, by the forcing of water from the boiler, by pressure of steam, under the circumstances, and substantially as set forth. The governing of draft valves, by expansion of water, being expressly disclaimed, as constituting no part of my invention.

**UNIVERSAL JOINT FOR CONNECTING SHAFTS, &c.**—Jonas Hinkley, of Huron, Ohio. I claim, connecting shafts, when placed angularly with each other, by means of the universal joints, constructed as shown and described, by which a rotary motion may be communicated from one shaft to the other.

**MORTISING TOOL**—Hazard Knowles, of New York City. I do not claim, broadly, an instrument with teeth upon one or both edges; nor to the making of an instrument with teeth along the edge or edges, on a line inclined to the line of motion of such instrument.

But I claim combining in one instrument a series of chisels, of the width required to give the desired form to the wood to be cut, when the said chisels are arranged in succession, on a line oblique to the line of motion of the entire series, and with gullets interposed to receive and hold the wood cut by each chisel, until it passes through the thickness of the material to be cut, substantially as described, by which combination and arrangement the desired form is given at one operation, by the breaking of the chisels, and by the inclination of the series to the line of motion of the cutting edge, as set forth.

I also claim the employment of an instrument, composed of the combined series of chisels, arranged substantially as specified, in combination with the jaws on which the wood to be mortised is placed, which jaws are to be set or adjusted, relatively to the line of motion of the said instrument, and the inclination of the series of chisels, as to sustain the under surface of the wood, outside of the form intended to be cut, and to act as resisting shears, in conjunction with the chisels which finish the cutting of the desired form, substantially as described.

**STENCILING WINDOW SHADES**—Daniel Lloyd, of New York City. I claim, first, producing patterns on window shades, in which long or continuous lines form a prominent feature, by means of pairs of stencils, of the full size of the design, prepared in the manner set forth.

Second, the mode of registering the stencils, by use of the movable piece, c, in combination with the fixed stops, b, or their equivalent, for the purpose of readily adapting the stencils to shades of various widths, as specified.

**PILL MAKING**—N. W. Krumler, of Cincinnati, Ohio. I claim the combination of the adjustable plates, 7 and 8, apron, 2, pulley, 1, and drum, 3, and these, in combination with the grooved roller, 12, and segmental plate, 14, all substantially as and for the purposes set forth and represented.

**MASTIC FOR COVERING WALLS**—A. C. Moestue, of Kane Co., Ill. I do not claim the application of an alkaline rosin solution; nor do I claim the sprinkling of pulverized substances on painted surfaces; and do not confine myself to any peculiar mode of coating the surface with rosin.

But I claim the glazing of surfaces previously coated with rosin, or its equivalent, by a naked flame, in the manner and for the purposes described.

**GRINDING MILLS**—Lucius Paige, of Cavendish, Vt. I claim arranging and combining with a screw, in manner substantially as described, one or more wheels and a hopper, whereby such mechanism is made to answer the purpose of a mill for grinding.

**CUTTING FLOCKS AND PAPER STOCK**—J. N. Pitts, of Blackstone, Mass. I claim the combination of the cylinders, F, F, provided with spiral knives, f, cutters, I, attached to the adjustable and elastic or yielding bars, G, G, and the drum, B, the parts being arranged as shown, for the purpose specified.

**PUNCHING MACHINE**—Rufus Porter, of Washington, D. C. I claim the use of the double quadrant, J, J, in combination with the tappet, S, the sliding shaft, I, when their several parts, are arranged and operated in connection with the fly wheel, G, substantially in the manner set forth.

**HINGE**—G. M. Ramsay, of New York City. I claim the anti-friction rollers, A, in combination with a joint hinge, substantially in the manner and for the purposes set forth.

**BEE HIVES**—H. G. Robertson, of Greenville, Tenn. I do not claim lime, as a material for packing the joints of my hive, but merely indicate it as the most suitable for that purpose, among several materials offensive to insects, which I know of that could be used with more or less advantage. I claim making the joints hollow, and stuffing them with caustic lime, or other matter offensive to insects in the manner and for the purpose specified.

**CLEARING SNOW FROM RAILROAD TRACKS**—Riley Root and S. G. Holyoke, of Galesburg, Ill. We do not claim a revolving track clearer, driven by the running gear of the locomotive, as we are aware that various forms of such have been proposed.

But we claim the arrangement of a rotary fan blower, provided with knives, and made sufficiently large to sweep the entire width of the tracks. The said rotary blower is to be driven by a power independent of the locomotive wheels, and is capable of being revolved in either direction, at right angles to the direction of the track.

**SCREW JACKS**—H. F. Shaw, of South Boston, Mass. I claim the described screw jack, consisting essentially of the screw, C, plates, E, and double pawls, g, operating in the manner, substantially as set forth.

**CHIMNEY COWLS**—C. F. Thomas, of Taunton, Mass. I do not claim a turning cow applied to the top of a chimney, or flue, and having a wind vane attached to it.

But I claim arranging the vane, so that it shall extend directly across the discharging aperture of the cow or ventilator, and divide such aperture, in manner and for the purpose, as explained, in the manner and for the purpose specified.

I also claim constructing the vane of two wings flaring from one another, as they extend from the cow, as specified, the same being for the object or objects, as stated.

I also claim arranging each of the wings so that it shall extend down below the discharging apertures of the cow, and from and around the external surface of the cow, substantially as described.

**ATTACHING TEETH TO SAW PLATES**—P. B. Tyler, of Springfield, Mass. I claim, first, the hardened nib holders, attached to the saw plate at each tooth, to hold a self-cutting nib, as described.

Second, I also claim the cutting nibs attached to the saw teeth, whether by means of the nib holder, or directly connected with the plate, constructed and combined with the saw, specifically as specified.

**DEVICE IN TREE-NAIL MACHINES**—Elbridge Webster, of Gardiner, Me. I disclaim the traveling of the forming box over the tree-nail, and the alteration of the size of the tree-nail, by the expansion and contraction of the cutter box, broadly considered.

I claim, in tree-nail machines, the construction of the traversing forming box of a flaring mouthed bit holder, combined with a slide, g, whose upper surface composes so much of the form box opening, as lies below the plane of the bit seat produced, perpendicular to which plane, said slide is adjustable, for changing the size of the tree-nail, the operation being as set forth.

**BUGGY WAGONS**—Thos. Winans, of Baltimore, Md. I claim the combination of bent bars and springs, arranged substantially as described, to connect the fore and hind axles, support the seat, with both the requisite firmness and elasticity, and to permit the front wheels to pass under the seat in turnings round.

**BELT AND BAND FASTENINGS**—Geo. D. Young, of Plymouth, Mass. I claim a clasp for uniting the ends of a belt or band consisting of the bottom plate, with its vertical studs and the turning button or its equivalent, all operating together, to rigidly gripe the belt or band, as described.

**SOLDERING IRON**—Daniel Dod, (assignor to himself and Henry F. Read), of Brooklyn, N. Y. I do not claim the iron handle or copper bit, nor any particular external form of soldering irons, nor the general application of heated centers, as used in embossing irons or rollers, crimping irons, curling tongs, and hatters' irons, as they have been known and used previous to my invention.

But I claim the combination of a hollow bit of copper, with movable centers of iron in the construction of soldering irons, as described.

**CUTTING MOLDINGS ON MARBLE**—Hiram L. Houghton, (assignor to Abel H. Grennell), of Springfield, Vt. I do not claim the rectilinear moldings upon marble by the use of revolving disks or grinders, that having been known before.

But I claim the method of cutting moldings upon the edges of blocks by the employment of the disks, K' K', or e', and the adjustable table top, B, operating in the manner and for the purpose set forth.

**CELL LOCK**—Edward Kershaw, (assignor to himself and Henry M. Hooper, & Co.), of Boston, Mass. I do not claim the invention of a single locking bar or bolt so made and applied to the wall above the door openings of a series of prison cells as to be capable, by its longitudinal movement, of either locking or unlocking, simultaneously, all the doors of said cells.

But I claim the combination of the bars, E and H, having notches at certain proportioned distances, as described, operating in connection with the studs, D, on the cell door, in the manner set forth.

**FLOURING MILLS**—Joseph Weis, of Bordentown, N. J. I claim the longitudinal grooves, i, between the dovetailed steel pieces, constructed and arranged in the manner set forth, and for the purpose specified.

**GRINDING MILLS**—Amory Felton, of Troy, N. Y. Patented originally Jan. 2, 1855. I claim, first, in combination with the cylinder and concave, the cap, H, provided with spiral ribs on its under side for carrying forward the ground material towards the discharge end, and thus to make room for that which follows, and prevent choking or choking, substantially as described.

I also claim, in combination with the cylinder, concave and cap, the fingers, e, for agitating the material, and causing it to pass more readily in between the cylinder and concave, substantially as described.

**HARVESTING MACHINES**—John Reilly, of Hart Prairie, Wis. Patented originally Nov. 23, 1855. I claim, first, the retracting divider, substantially as described.

Second, the grain guard, substantially as described.

### Somewhat of a Jumper.

John Lawrence Bagler, in the Louisville Times, offers to bet from \$3000 to \$5000 that he can jump, on a dead level, one foot further than any man in the world, or that he can stand flat-footed upon the earth and leap a brick wall fifteen feet high and four feet thick.

### Our Foreign Correspondence.

LONDON, Jan. 12, 1856.

MESSRS. EDITORS—I enclose you a section of Dunn's Patent Duplicate Retort Boiler, which is of simple construction, and, as shown by experiment, of great strength. The objects sought by the patentee are to render explosions more difficult, and if an explosion does take place, to diminish its mischievous effects by giving it a more partial character. Mr. Dunn substitutes for the present steam boiler, cylinders or retorts about ten feet long and nineteen inches in diameter, of best 1-4 inch Staffordshire plate, with strong cast-iron ends, forming the pipe junctions. The cylinders are placed in parallel lines, and the water supply pipe is connected with one end of each by a short neck, through which the water is pumped into all the cylinders, which are generally kept about half full. In the event of an explosion, only one cylinder is likely to be affected. If the action of the fire is excessive upon some of the cylinders, their relative position can be quickly altered, or the cylinders themselves may be turned over. The cylinders being small are easily transported from place to place. At an experiment, alluded by the chief engineer of Manchester and the neighborhood as Mr. Dunn's works, one of these retort boilers was lately tested by hydraulic pressure, and burst at a pressure of 525 lbs. to the square inch. These boilers being made in parts, all of which are duplicates, any portion can be replaced at any time, or the whole enlarged, by placing more cylinders side by side. The large heating surface renders these boilers very economical on the score of fuel. The inventor is well known in the engineering trade here.

For some years a weekly journal which should thoroughly represent the interests of the engineers of this country has been thought a desideratum. From the date (1843) of the establishment of the *Artizan*—favorably known to most of your readers by your occasional extracts—many times has the chick been all but breaking the shell, but always has some untoward event occurred to crush it before development. On January 5th, however, two journals appeared, appealing to the sympathies of engineers and scientific men generally—the *Engineer*, and the *Engineering Journal*. The former of these comprises about sixteen pages of the size of the *SCIENTIFIC AMERICAN*; the latter sixteen pages, somewhat smaller. There are many points of similarity in their contents. But what strikes the English readers of your valuable periodical the most, is the use they make of the *SCIENTIFIC AMERICAN*—a great testimony, however, to the value of that journal. For example, the *Engineer* has, at page 12, reproduced the elaborate perspective elevation and plan of an improved ship windlass, which was patented by J. Emerson, of Worcester, Mass., and illustrated in the *SCIENTIFIC AMERICAN* some little time since. The same journal has re-produced (page 13) a punching and shearing machine, and Stoddard's hand corn planter, both without acknowledgment, from some of your recent numbers. By a singular coincidence the *Engineering Journal* also gives the punching and shearing machine, for which it says it is indebted to the *Scientific American*—a high compliment to the nation at the expense of your journal. I might be uncharitable enough to assume this to be an ingenious evasion of the moral obligation to acknowledge borrowed articles did I not find at other pages your title properly given at the end of extracts. The number abounds in typographical errors; perhaps the fault may be due to the printer's "devil," after all, for in the address we are told that "a first number is, at best, necessarily a rough proof." I will not, under the circumstances, attempt to criticise these "rough proofs," but they must materially improve the quality of their matter if they wish to receive the support and assistance of the practical workmen in the engineering trade. While there is much in each that will be found useful, yet neither has at present shown that tone of practicability which is necessary to secure a large circulation in the shop.

The daily prints inform us that on and after May next fifteen large mail steamers will leave Europe monthly for the American continent, viz.: seven English packets, four United States, three Belgian, and one Portuguese. Fourteen of these will start from or touch at

England, the Portuguese packet being the single exception; eight of these fourteen steamers will start from Southampton, and the remaining six from Liverpool. These mail packets will cross the Atlantic by three different routes, which will terminate on the American side at the Brazils, Central America, and the United States. Rio de Janeiro will be the most southern point touched by them, and Halifax, Nova Scotia, the most northern point. In connection with these Atlantic packet lines there will be nearly twenty tributary ones, some of them as long as the Atlantic lines themselves. By these, the whole of the American Continent, down so far south as the river Plate on the eastern side, and from Peru to California in the Pacific, also the whole of the adjacent islands, including those of the West Indies, will be supplied with European correspondence.

### Coffee, its Cost and Culture.

It is believed by many that coffee can be cultivated in some of our Southern States as successfully as in Brazil, Java, and Jamaica; if so, it is high time that some of our planters were entering upon its culture, as it costs our country no less than \$15,500,000 annually for the beans of this plant.

The coffee tree lives to a great age provided that the land is kept well drained. The tree begins to bear when three years old, and is at its full bearing when seven years old. The tree is allowed to grow in height from six to seven feet; the top branches are pruned off when the tree is five years old, so that by the time it is seven it resembles a spread umbrella. Each branch droops downwards, and thus gives the pickers a good chance to pick the berry. The coffee tree in Brazil bears two crops each year, the large crop in the spring, and the small one in the fall. The first crop is picked when the berry is red, resembling a cherry. The second crop is in general small, and allowed to remain on the tree until fully ripe and dry. This crop, cured in the husk, is far superior in quality, and is called "pearl coffee." The blossom is beautiful, small, and tender. It remains on the tree from three to four days. If the weather is warm, with showers, during those few days, the crop is sure; if cool at nights, it often fails. When the berry is taken home from the field it is carried to a mill-house. The mill consists of three small rollers. The berry is put into a hopper, and a constant stream of water falls on the rollers during the time the mill is at work. By this process the outside hull is taken off and the berry is separated from it, and the coffee falls into a brick tank, where it is washed perfectly clean, and then put on a place covered with tile or brick raised in the center that the water may drain. It is then taken to the curing loft, where it is turned four times a day until the hull is crisp and dry. Then by putting it through large fanners the inside hull comes off, and leaves the berry ready for hand-picking for market.

### Sulphate of Indigo in Dyeing.

MESSRS. EDITORS—In your notices of foreign inventions three weeks ago, in speaking of permanent black, you allude to the "sulphate of indigo" as being used in fugitive colors. Sulphate of indigo cannot, strictly speaking, be termed a fugitive dye. In connection with the by-chromate of potash. I have used it very successfully in the dye house in coloring blues and greens, using the bi-chromate as mordant, and though not altogether equal to the blue vat, it is a mode far superior to the ordinary method of using the sulphate. T. SIBBS, A.M. Wooster, O., Jan. 1856. Dyer.

### New Method of Churning Milk.

E. Conkling, of Cincinnati, suggests to us an improved method of churning to obtain butter from the milk when it is sweet. The process is, to force the milk in small streams through orifices, such as a perforated plate or board, with a pump. He has tried a number of experiments and met with gratifying success.

### American Plows in Malta.

Light American plows have superseded the heavy Scotch plows in Malta. They were introduced recently by the Governor, Sir Wm. Reid, formerly of Bermuda. The Scotch plow was too heavy for the warm climate and the mules of Malta.